



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/526,442

03/02/2005

Ralph Nonninger

3315

3344

7590

01/30/2008

Walter A Hackler  
Patent Law Office  
2372 S E Bristol Street  
Suite B  
Newport Beach, CA 92660-0755

EXAMINER

METZMAIER, DANIEL S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

01/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/526,442

**Applicant(s)**

NONNINGER ET AL.

**Examiner**

Daniel S. Metzmaier

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/2/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Claims 1-7 are pending.

#### ***Claim Rejections - 35 USC § 112 / 35 USC § 101***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4-7 are provides for the use of the colloidal system as defined in independent claim 1, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 4-7 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

To the extent the use claims 4-7 were to be amended to provide a proper method step defining a method of using the compositions set forth in independent claim 1, the method claims may be subject to restriction of said methods and instant compositions of claims 1-3 by original presentation.

No art has been applied to claims 4-7 due to the facts that said claims appear too indefinite and/or are directed to subject matter that is not proper process under 35 USC § 101.

3. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is verbose and confusing.

It is unclear what applicants intend as the particle size distribution.

It is unclear what is intended by the terms, "energetic balance".

It is unclear what is intended by the limitations, "the atoms and/or ions located in the surface of the nanoparticles are saturated in terms of valence in dependence on the concentration of the nanoparticles in the dispersion medium using a surface modifier".

It is unclear how the "atoms and/or ions located in the surface" can at the same time be "saturated in terms of valence in dependence on the concentration of the nanoparticles in the dispersion medium using a surface modifier". Some of the valencies must be part of the particle if the atoms and/or ions are in the surface.

The alternative groups set forth in claims 2 and 3 are improper. Please see MPEP § 2173.05(h).

***Claim interpretation***

4. It is noted that claim 3 provides dilute acid for the dispersion medium and claims 2 and 3 provide inorganic or organic acid as the surface modifier. Since dilute acid encompasses the modifiers of claim 2, a reference disclosing the use of a dispersion medium of dilute acid as set forth in claim 3 would likewise encompass claim 2. An acid modifier as set forth in claim 2 would likewise read on the scope of claim 3.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Burgard et al (denoted Burgard et al (I)), Synthesis and Colloidal Processing of Nanocrystalline (Y<sub>2</sub>O<sub>3</sub>-stabilized) ZrO<sub>2</sub>

Powders by a Surface Free Energy Controlled Process, Materials Research Society Symposium Processing, Materials Research Society, Pittsburgh, PA US Bd. 432, 8, April 1996 pp. 113-120. See pages 114-115 for formation and redispersing of nanoparticles (5 to 10 nanometers)  $\text{ZrO}_2$  doped with  $\text{Y}_2\text{O}_3$  that have been surface modified with  $\beta$ -diketone or organic acid and redispersed in water.

To the extent Burgard et al (I) differs from the claims in the particle size distribution, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to have some variation in particle size as a particle size impurity. See MPEP 2144.04(VII); "Purer forms of known products may be patentable, but the mere purity of a product, by itself, does not render the product unobvious. *Ex parte Gray, supra.*"

9. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Burgard et al (denoted Burgard et al (II)), Manufacture and Processing of Nanoscale (stabilized)  $\text{ZrO}_2$  by a Colloid-Chemical Process, Institut fur neue Materialien, Symposium 6, Werkstoff- und Verfahrenstechnik '96, Stuttgart, pp. 569-577; as evidenced by Chemical Abstract AN 1998:64092. Burgard et al (II) is believed to have the same of substantially same disclosure as Burgard et al (I) and is believed cumulative thereto.

To the extent Burgard et al (II) differs from the claims in the particle size distribution, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to have some variation in particle size as a particle size impurity. See MPEP 2144.04(VII); "Purer forms of known products may be patentable, but the

mere purity of a product, by itself, does not render the product unobvious. *Ex parte Gray, supra.*"

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nonninger et al, "*Development of New Materials by Chemical Nanotechnologies*", Zusammenfassung & Werkstoffwoche, 98, Band VIII:Symposium 10, Polymere:symposium 14, Simulation Polymere, Munich, Sept, 1998, Meeting date 1998, pp. 187-192, Editors: Michaeli, Walter. Wiley VCH Verlag GmbH Weinheim, Germany; as evidenced by Chemical Abstract AN 2000:193596. See the abstract and Table 1 on page 188 and silane surface treatment on page 189.

To the extent Nonninger et al differs from the claims in the particle size distribution, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to have some variation in particle size as a particle size impurity. See MPEP 2144.04(VII); "Purer forms of known products may be patentable, but the mere purity of a product, by itself, does not render the product unobvious. *Ex parte Gray, supra.*"

11. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bayer AG, DE 198 59 867 A, as evidenced by Derwent Abstract AN 2000-466923. See Derwent Abstract and reference examples.

To the extent Bayer AG differs from the claims in the particle size distribution, it would have been obvious to one of ordinary skilled in the art at the time of applicants'

invention to have some variation in particle size as a particle size impurity. See MPEP 2144.04(VII); "Purer forms of known products may be patentable, but the mere purity of a product, by itself, does not render the product unobvious. *Ex parte Gray, supra.*"

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 7, 14, 22 and 23 of copending Application No. 10/513,307. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims employ the transitional language comprising and otherwise encompass the claims of the copending '307 application. The copending claims '307 are generic to the disclosed ([0018]-[0020], and [0040]) and the use of inorganic acid exemplified in copending '307.



This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### **Conclusion**

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goerbbert C et al, "*Wet Chemical Deposition of ATO and ITO Coatings Using Crystalline Nanoparticles Redispersible in Solutions*", Thin Solid Films, Elsevier-Sequoia S.A. Lausanne, CH, Bd. 351, Nr. 1-2, 30 Aug. 1999, pp 79-84, is directed to tin oxide and/or indium oxide particles and lacks the oxides set forth in instant claim 1. Goerbbert C et al is cited as an X reference for claims 1-8, within the search report.

Bayer AG, DE 198 59 852 A, as evidenced by Derwent Abstract AN 2000-491703, is directed to  $\text{TiO}_2$ , which is not set forth in the instant claim 1. Bayer AG is cited as an X reference for claims 1-5, within the search report.

Goerbbert C et al, "*Preparation of Conducting Ultrafiltration Membrane from Redispersible, nanoscaled, Crystalline  $\text{SnO}_2\cdot\text{Sb}$  particles*", cited as an X reference for claims 1-5, within the search report lacks the oxides set forth in the instant claim 1.

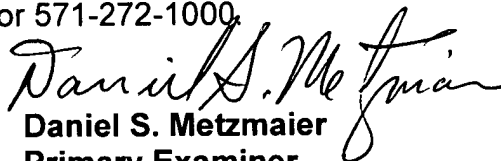
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:  
10/526,442  
Art Unit: 1796

Page 9

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1796**

DSM